

ABSTRACT OF THE DISCLOSURE

A cylindrical bonding structure and its method of manufacture. The cylindrical bonding structure is formed over the bonding pad of a silicon chip and the chip is flipped over to connect with a substrate board in the process of forming a flip-chip package. The cylindrical bonding structure mainly includes a conductive cylinder and a solder block. The conductive cylinder is formed over the bonding pad of the silicon chip and the solder block is attached to the upper end of the conductive cylinder. The solder block has a melting point lower than the conductive cylinder. The solder block can be configured into a cylindrical, spherical or hemispherical shape. To fabricate the cylindrical bonding structure, a patterned mask layer having a plurality of openings that correspond in position to the bonding pads on the wafer is formed over a silicon wafer. Conductive material is deposited into the openings to form conductive cylinders and finally a solder block is attached to the end of each conductive cylinder.